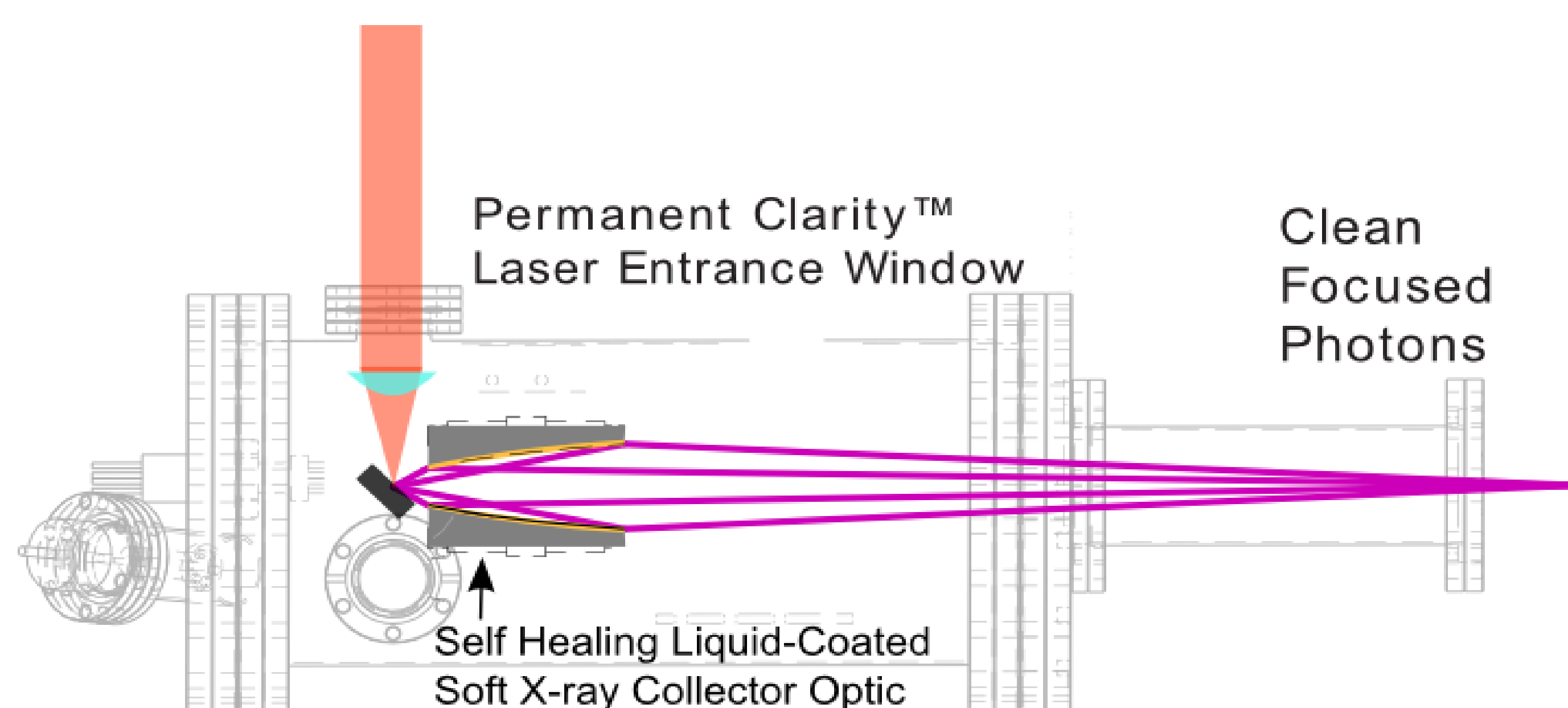


## STAN – A Compact Light Source for EUV & Beyond

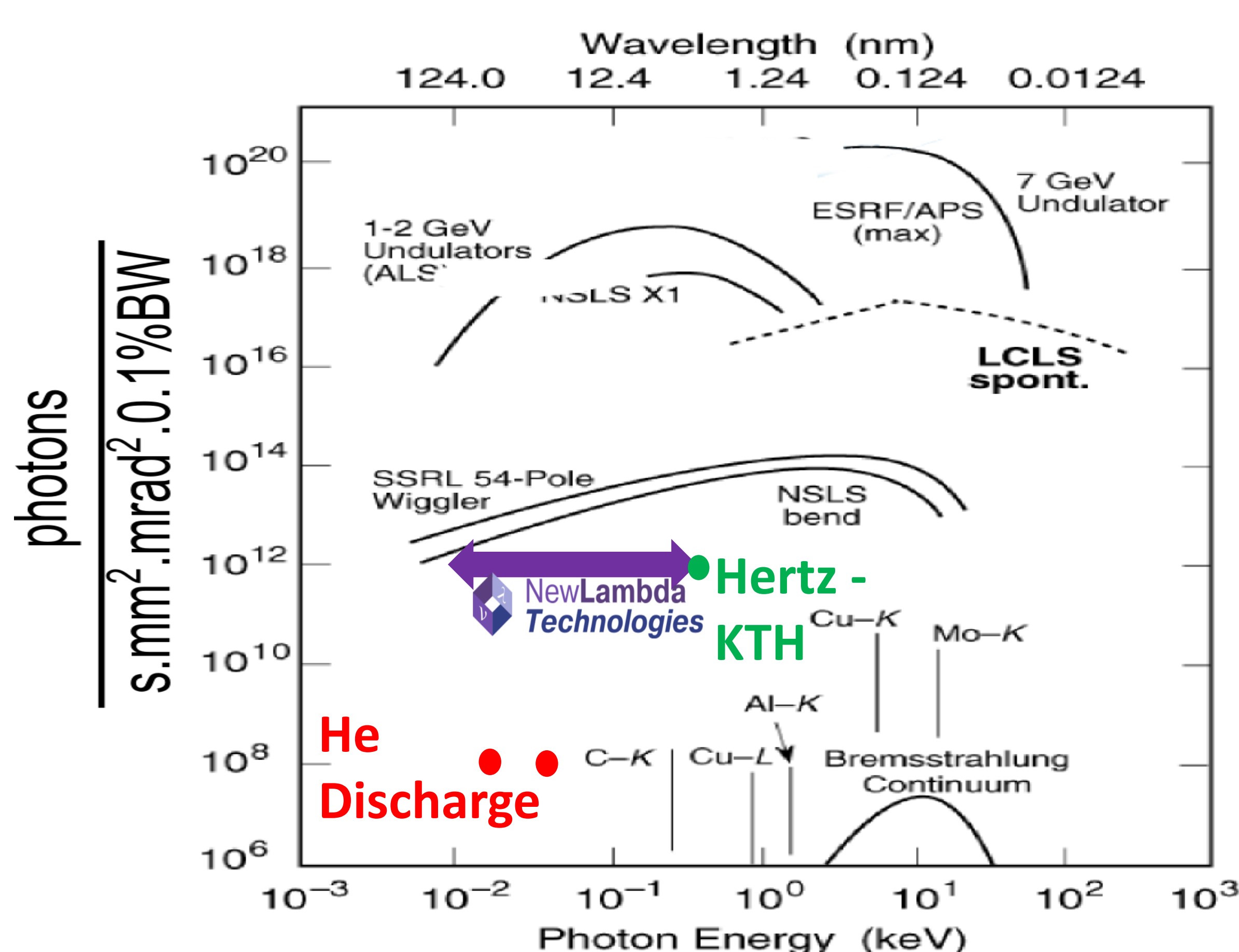
Our **STAN™** light source is the culmination of 30 years of research into incoherent EUV/soft x-ray light sources. **STAN™** will be of interest for applications where a lab based high brightness source of tuneable soft x-rays in the 10 eV to 500 eV range is required or desired.

The **STAN™** system consists of a laser plasma soft x-ray source, brought to a debris free focus by our plasma robust self-healing liquid metal coated optics. The laser optics are protected by our simple and effective **Permanent Clarity™** technology, which allows us to produce tiny laser plasmas continuously on bulk liquid materials, without requiring any complex operations training and at a low cost of operation.



**STAN™** is extremely flexible, and can be driven by low cost 10 W laser input where brightness and etendue are the drivers, or coupled to kW class lasers where flux is the key requirement.

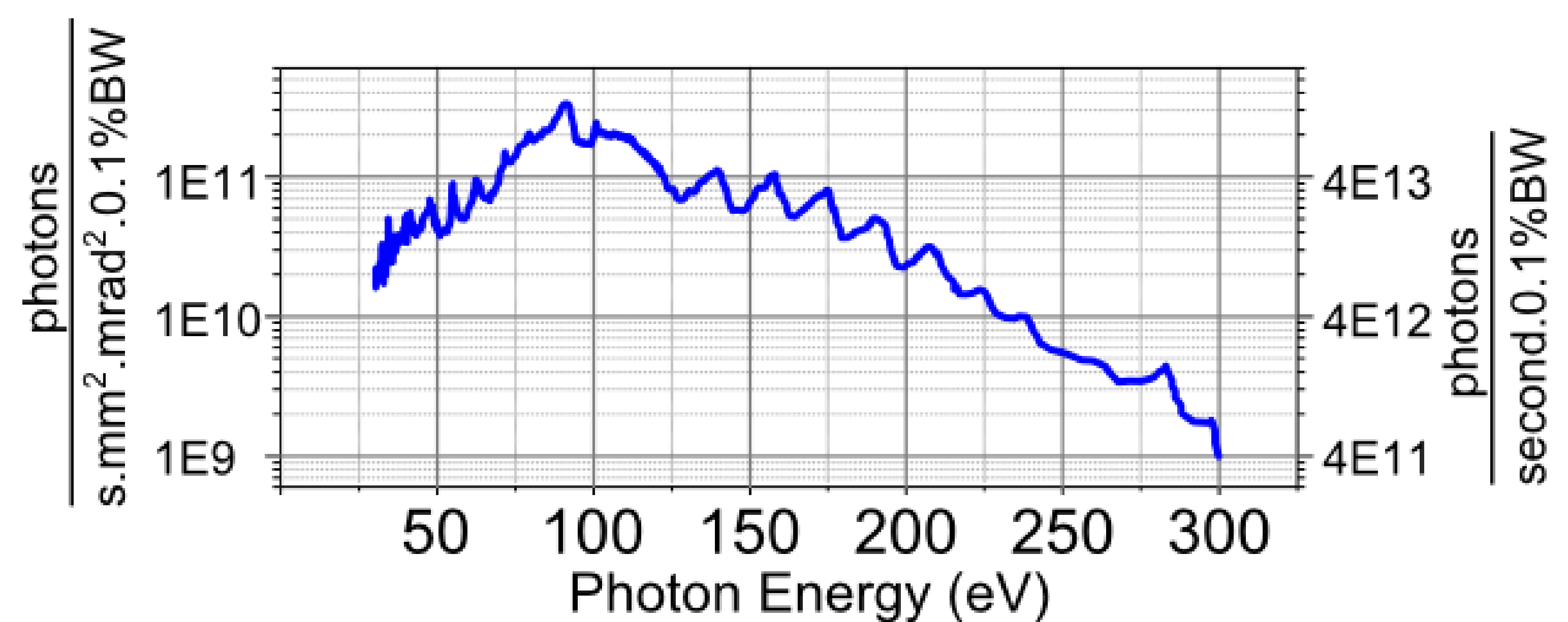
**STAN™** can be coupled to applications directly or through one of our monochromator systems:



**STAN™** brightness is comparable to that of a synchrotron bending magnet.

### Applications

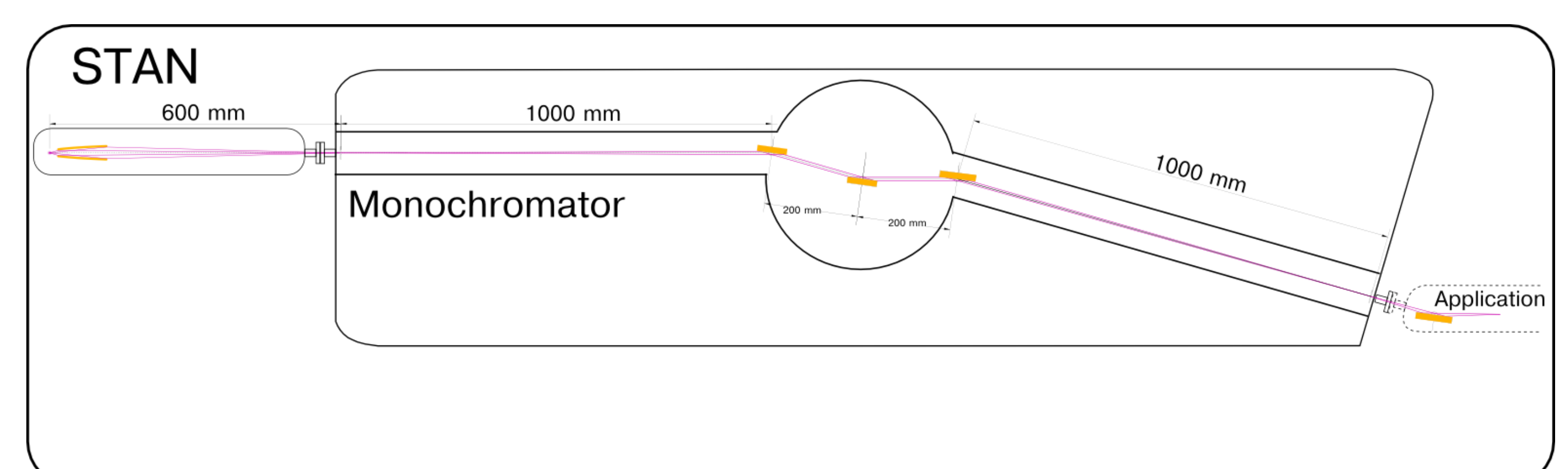
Photoelectron Spectroscopy  
UPS/SXPS/PEEM/ARPES/ARTOF  
Reflectometry  
Nanopatterning & Nanoablation  
Soft x-ray/EUV Microscopy  
EUV Mask Inspection  
EUV Resist Exposure



### STAN™ Technology

The core technology behind STAN is the liquid metal coated collector optic [1]. This optic is coated with the same metal material as the plasma fuel, meaning that debris from the plasma becomes absorbed into the liquid mix, thus maintaining a clean, efficiently reflecting surface over many thousands of hours. It can thus be placed within millimetres of the plasma source, delivering more photons to an application than would be possible with conventional solid optics.

### STAN™ monochromator options



Output after monochromator for 100W laser input	
System Parameter	Value
Energy range*	30 – 125 eV
Entrance slit size**	10 µm x 2 mm
Image size (exit slit size)***	50µm x 50 µm
Divergence at exit	6.2 mrad (H) x 3.5 mrad (V)
Flux at exit slit @ 100 eV	5x10 <sup>10</sup> photons/s/0.15%BW
Brilliance at exit @ 100 eV	9 x 10 <sup>11</sup> photons/s/mrad²/mm²/0.15%BW
Resolving power (E/ΔE) @ 100 eV	600
System footprint (incl. STAN)	3 m x 0.5 m x 0.5 m

### References

[1]K. Fahy, et al, *Robust liquid metal collector mirror for EUV and soft x-ray plasma sources*, Proc. SPIE 7802, Advances in X-Ray/EUV Optics and Components V, 78020K doi:10.1117/12.860747 (2010)

